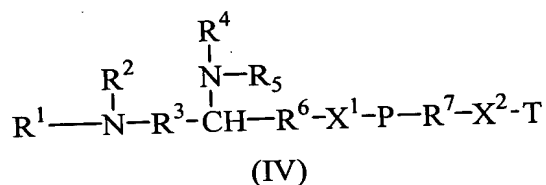


This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Presently amended) A compound having the formula



wherein:

X^1 and X^2 are independently a direct bond or a linking atom or group selected from the group consisting of $-\text{C}(=\text{X}^3)-$, $-\text{C}(=\text{X}^3)-\text{N}(\text{R}^8)-$, and $-\text{C}(=\text{X}^3)-\text{N}(\text{R}^8)-\text{C}(=\text{X}^3)-$;

X^3 is $-\text{O}-$ or $-\text{S}-$;

R^1 is acyl of from about 7 16 to about 23 carbons;

R^2 is hydrogen or lower alkyl;

R^3 is alkylene of from 1 to about 10 carbons;

R^4 is acyl of from about 7 16 to about 23 carbons;

R^5 is hydrogen or lower alkyl;

R^6 is a direct bond;

R^7 is a direct bond or alkylene of from 1 to about 10 carbons;

R^8 is hydrogen or lower alkyl;

P is a hydrophilic polymer; and

T is a targeting ligand which targets cells or receptors selected from the group consisting of myocardial cells, endothelial cells, epithelial cells, tumor cells and the glycoprotein GPIIb/IIIa receptor.

2. Cancelled.

3. (Original) A compound according to Claim 2 wherein:
X¹ is -C(=O)-NH-C(=O)-;
X² is -C(=O)-;
R¹ is acyl of from about 15 to about 20 carbons;
R³ is alkylene of from 1 to about 3 carbons;
R⁴ is acyl of from about 15 to about 20 carbons; and
R⁶ is a direct bond;
R⁷ is lower alkylene.
4. (Original) A compound according to Claim 3 wherein:
R¹ is acyl of from about 17 to about 19 carbons;
R³ is methylene;
R⁴ is acyl of from about 17 to about 19 carbons; and
R⁷ is ethylene.
5. Cancelled.
6. (Original) A compound according to Claim 1 wherein said hydrophilic polymer is selected from the group consisting of polyalkyleneoxides, polyvinyl alcohol, polyvinylpyrrolidones, polyacrylamides, polymethacrylamides, polyphosphazenes, poly(hydroxyalkylcarboxylic acids) and polyoxazolidines.
7. (Original) A compound according to Claim 6 wherein said hydrophilic polymer comprises a polyalkyleneoxide.
8. (Original) A compound according to Claim 7 wherein said hydrophilic polymer is selected from the group consisting of polyethylene glycol and polypropylene glycol.
9. (Original) A compound according to Claim 8 wherein said hydrophilic polymer is polyethylene glycol.

10. (Original) A compound according to Claim 8 wherein said hydrophilic polymer is PEG3400.

11. (Original) A compound according to Claim 1 wherein said targeting ligand comprises a peptide of the formula:



wherein:

m and n are independently an integer of from 1 to about 100;

Xaa and Zaa are independently selected from the group consisting of natural amino acids and synthetic amino acids;

Yaa is selected from Arginine, Homoarginine, and Lysine-N-acetimidate; and

with the proviso that when Xaa and Zaa are sulfur containing amino acids, Xaa and Zaa may be linked together via a disulfide linkage.

12. (Withdrawn) A compound according to Claim 11, wherein:

Xaa is Glycine;

Yaa is Arginine;

Zaa is Serine;

n is 1, 2 or 3; and

m is 1.

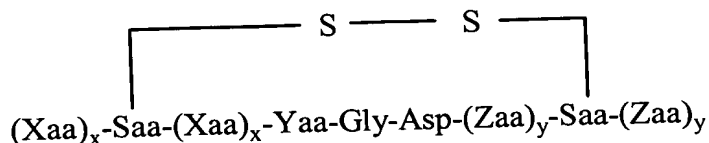
13. (Withdrawn) A compound according to Claim 12, wherein:

n is 3.

14. (Original) A compound according to Claim 11, wherein:

Xaa and Zaa comprise an amino acid independently selected from sulfur containing amino acids.

15. (Original) A compound according to Claim 1 wherein said targeting ligand comprises a peptide of the following formula:



wherein:

each x and y is independently an integer of from 0 to about 50;
each Saa is selected from the group consisting of natural and synthetic sulfur containing amino acids;
each Xaa and Zaa are independently selected from the group consisting of natural amino acids and synthetic amino acids; and
Yaa is selected from Arginine, Homoarginine, and Lysine-N-acetimidate.

16. (Original) A compound according to Claim 15 wherein:
each Saa is independently selected from the group consisting of D-Cysteine, L-Cysteine, D-Penicillamine and L-Penicillamine.

17. (Original) A targeted vesicle composition for therapeutic or diagnostic use *in vivo* comprising, in an aqueous carrier, lipid, protein or polymer gas filled vesicles, wherein said vesicles further comprise a compound according to Claim 1.

18. (Original) A targeted vesicle composition according to Claim 17, wherein said vesicles are selected from the group consisting of liposomes and micelles.

19. (Original) A targeted vesicle composition according to Claim 18, wherein said vesicles comprise liposomes.

20. (Original) A targeted vesicle composition according to Claim 19 wherein said liposomes comprise a phospholipid selected from the group consisting of phosphatidylcholine, phosphatidylethanolamine and phosphatidic acid.

21. (Original) A targeted vesicle composition according to Claim 20 wherein said phosphatidylcholine is selected from the group consisting of dioleoylphosphatidylcholine, dimyristoylphosphatidylcholine, dipalmitoylphosphatidylcholine and distearoylphosphatidylcholine.

22. (Original) A targeted vesicle composition according to Claim 21 wherein said phosphatidylcholine comprises dipalmitoylphosphatidylcholine.

23. (Original) A targeted vesicle composition according to Claim 20 wherein said phosphatidylethanolamine is selected from the group consisting of dipalmitoylphosphatidylethanolamine, dioleoylphosphatidylethanolamine, N-succinyldioleoylphosphatidylethanolamine and 1-hexadecyl-2-palmitoylglycerophosphoethanolamine.

24. (Original) A targeted vesicle composition according to Claim 23 wherein said phosphatidylethanolamine comprises dipalmitoylphosphatidylethanolamine.

25. (Original) A targeted vesicle composition according to Claim 20 wherein said phosphatidic acid comprises dipalmitoylphosphatidic acid.

26. (Original) A targeted vesicle composition according to Claim 17, wherein said vesicles comprise a gas selected from the group consisting of perfluorocarbons and sulfur hexafluoride.

27. (Original) A targeted vesicle composition according to Claim 26 wherein said perfluorocarbon gas is selected from the group consisting of perfluoromethane, perfluoroethane, perfluoropropane, perfluorobutane and perfluorocyclobutane.

28. (Original) A targeted vesicle composition according to Claim 27 wherein said perfluorocarbon gas is selected from the group consisting of perfluoropropane and perfluorobutane.

29. (Original) A targeted vesicle composition according to Claim 28 wherein said perfluorocarbon gas comprises perfluorobutane.

30. (Original) A targeted vesicle composition according to Claim 17 wherein said gas is derived, at least in part, from a gaseous precursor.

31. (Original) A targeted vesicle composition according to Claim 30 wherein said gaseous precursor has a boiling point of greater than about 37°C.

32. (Original) A targeted vesicle composition according to Claim 31 wherein said gaseous precursor comprises a perfluorocarbon.

33. (Original) A targeted vesicle composition according to Claim 32 wherein said perfluorocarbon is selected from the group consisting of perfluoropentane and perfluorohexane.

34. (Original) A targeted vesicle composition according to Claim 17 wherein said vesicles further comprise a bioactive agent that is different from said gas and said compound.

35. (Original) A targeted vesicle composition according to Claim 34 wherein said bioactive agent comprises a therapeutic agent selected from the group consisting of genetic material, dihydroergotamine, heparin sulfate, tissue plasminogen activator, streptokinase, urokinase, hirudin, and mixtures thereof.

36-53. Cancelled.

54. (Previously presented) A compound according to Claim 1, wherein:

X^1 is $-C(=X^3)-N(R^8)-$;

X^2 is $C(=X^3)$;

X^3 is O;

R^1 is acyl of 18 carbons;

R^2 is H;

R^3 is ethylene;

R^4 is acyl of 18 carbons;

R^5 is H;

R^6 is a direct bond;

R^7 is ethylene;

R^8 is H;

P is PEG-3400; and

T comprises a peptide having the sequence CRGDC, wherein the two cysteines are linked together via a disulfide linkage.

55. (Previously presented) A targeted vesicle composition for therapeutic or diagnostic use *in vivo* comprising, in an aqueous carrier, lipid vesicles, wherein said vesicles comprise a compound according to Claim 54.

56. (Previously presented) A targeted vesicle composition according to Claim 55 wherein said lipid vesicles comprise a phospholipid selected from the group consisting of phosphatidylcholine, phosphatidylethanolamine and phosphatidic acid.

57. (Previously presented) A targeted vesicle composition according to Claim 56 wherein said phosphatidylethanolamine comprises dipalmitoylphosphatidylethanolamine.

58. (Previously presented) A targeted vesicle composition according to Claim 55, wherein said vesicles comprise a gas selected from the group consisting of perfluorocarbons and sulfur hexafluoride.

59. (Previously presented) A targeted vesicle composition according to Claim 58, wherein said vesicles comprise perfluorobutane.

60. (Previously presented) A targeted vesicle composition according to Claim 55, further comprising urokinase.

61. (New) A compound according to Claim 4 wherein:

R^1 and R^4 are acyl of about 18 carbons.

62. (New) A compound according to Claim 4 wherein:

R^1 is an acyl of from about 17 to about 19 carbons.

63. (New) A compound according to Claim 4 wherein:

R^1 is an acyl of about 18 carbons.